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SUGHRUE MION, PLLC				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/590,605

**Applicant(s)**

KUROKAWA ET AL.

**Examiner**

KRISTEN A. MANSKAR

**Art Unit**

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-9 and 15-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 15-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2007 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/12/07 and 8/24/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 11/28/07 have been fully considered but they are not persuasive. With respect to applicant's argument that the cited reference of Ohkawa does not explicitly disclose a light diffusing sheet but a light guide, the applicant is advised that the light guide sheet is a sheet with diffusive properties as apparent by the recesses that allow for regulation of the light to enable even emission across a display. Regarding applicant's argument that the micro-reflector is not shaped similar to a polyangular pyramid, while Ohkawa discloses a micro-reflector shaped like a block, the applicant is advised that a block can be defined as "a mold or form on which articles are shaped or displayed." <http://www.merriam-webster.com/dictionary/block> Additionally, Figure 6 clearly shows the micro-reflector in the shape of a pyramid.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: reciting the limitation "the surfaces" in Line 2 of claim 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 2, 5, 6, 8, and 9** are rejected under 35 U.S.C. 102(b) as being anticipated by Ohkawa (Patent 6,485,157), hereafter referred to as Ohkawa.
5. With respect to claim 1, Ohkawa discloses a light diffusing sheet (30) comprising a light-transmitting resin (Column 8, Lines 22-29), characterized by having fine recesses (90) formed in at least one of the surfaces thereof (bottom surface), the fine recesses having a shape which is any one of the shape of an inverted polyangular pyramid (Figure 7a), the shape of an inverted truncated polyangular pyramid, the shape of an inverted cone, and the shape of an inverted truncated cone (Column 5, Lines 25-31; Figure 7b). Note Figure 7b shows an inverted truncated polyangular pyramid for the benefit of evenly distributing light across a display surface, therefore this surface would have inherent diffusive properties (Column 8, Lines 35-37).
6. Regarding claim 2, Ohkawa discloses a light diffusing sheet characterized by containing a light diffusing agent (Column 8, Lines 30-53). Note the PET film allows for double reflection of a light beam, therefore allowing for a certain amount of diffusion to occur, additionally, the device includes a LCD panel having diffusive properties.
7. In reference to claim 5, Ohkawa discloses a light diffusing sheet wherein the recesses have been regularly arranged (Column 12, Lines 3-9; Figure 9).
8. Regarding claim 6, Ohkawa discloses a light diffusing sheet wherein the bevel between the surface having fine recesses formed and each inclined face of each fine recess having the shape of an inverted polyangular pyramid or inverted truncated polyangular pyramid, or the bevel between that surface and the Ridgeline of each fine

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recesses having the shape of an inverted truncated cone is 15-17 degrees (Column 12, Lines 43-48; Column 10, Lines 29-32, 48-65).

9. With regard to claim 8, Ohkawa disclose a light diffusing sheet wherein the proportion of the area occupied by the fine recesses in the surface having the fine recesses formed is 30-100 % (Figure 11).

10. Regarding claim 9, Ohkawa discloses a light diffusing sheet wherein the fine recesses have been formed in an oblique-line arrangement (Figures 10 and 11).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 7, 15, 16, 17, 19, 21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa.

13. Regarding claim 7, while Ohkawa discloses a light diffusing sheet wherein the bevel between the surface having fine recesses formed and each inclined face of each fine recess having the shape of an inverted polyangular pyramid or inverted truncated polyangular pyramid, or the bevel between that surface and the Ridgeline of each fine recesses having the shape of an inverted truncated cone is 15-17 degrees (Column 12, Lines 43-48; Column 10, Lines 29-32, 48-65), Ohkawa does not explicitly disclose the bevel being between 35-70 degrees.

14. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the disclosed angle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

15. With respect to claim 15, Ohkawa discloses a light diffusing sheet (30) comprising a light-transmitting resin (Column 8, Lines 22-29), characterized by having fine recesses (90) formed in at least one of the surfaces thereof (bottom surface), the fine recesses having a shape which is any one of the shape of an inverted polyangular pyramid (Figure 7a), the shape of an inverted truncated polyangular pyramid, the shape of an inverted cone, and the shape of an inverted truncated cone (Column 5, Lines 25-31; Figure 7b). A light diffusing sheet wherein the fine recesses have been formed in an oblique-line arrangement (Figures 10 and 11), and the proportion of the area occupied by the fine recesses in the surface having the fine recesses formed is 30-100 % (Figure 11).

16. Ohkawa does not explicitly disclose the bevel being between 35-70 degrees.

17. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the disclosed angle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

18. Regarding claim 16, Ohkawa discloses a light diffusing sheet further comprising a core layer (RF) made of a light-transmitting resin which has been laminated to the

surface on the side opposite to the surface having fine recesses formed (Column 8, Lines 30-37; Figure 7c).

19. In reference to claim 17, Ohkawa discloses a light diffusing sheet wherein the core layer contains a light diffusing agent (Column 8, Lines 35-37).

20. Regarding claim 19, Ohkawa does not explicitly disclose a light diffusing sheet wherein the surface on the side opposite to the surface having fine recesses has recesses and protrusions which are finer than the fine recesses. However, Ohkawa does disclose the larger recesses being on the opposite side (Figure 5).

21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the recesses across from the smaller protrusions, since it has been held that rearranging parts of a prior art structure involves only routine skill in the art. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

22. Regarding claim 21, while Ohkawa discloses a backlight unit including a light diffusing sheet having a certain thickness (Figure 7c), Ohkawa does not explicitly disclose a backlight unit including a light diffusing sheet having a thickness of 0.3-5 mm and has been disposed in front of a light source so that the surface of the sheet which has fine recesses formed serves as a light emission side.

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the thickness of the light diffusing sheet, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

24. With respect to claim 22, Ohkawa does not explicitly disclose a light diffusing sheet wherein the surface on the side opposite to the surface having fine recesses has recesses and protrusions which are finer than the fine recesses. However, Ohkawa does disclose the larger recesses being on the opposite side (Figure 5). Additionally, Ohkawa discloses a backlight unit including a light diffusing sheet having a certain thickness (Figure 7c), however, Ohkawa does not explicitly disclose a backlight unit including a light diffusing sheet having a thickness of 0.3-5 mm and has been disposed in front of a light source so that the surface of the sheet which has fine recesses formed serves as a light emission side.

25. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the recesses across from the smaller protrusions, since it has been held that rearranging parts of a prior art structure involves only routine skill in the art. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the thickness of the light diffusing sheet, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

26. **Claims 18, 20, 23, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkawa in view of Chang, et al. (Patent 7,210,835), hereafter referred to as Chang.

27. With respect to claim 18, Ohkawa does not explicitly disclose a light diffusing sheet wherein a functional layer having light-transmitting properties has been laminated



to the surface having fine recesses formed and the functional layer having light-transmitting properties comprises an ultraviolet-absorbing layer and/or antistatic layer.

28. Chang discloses a functional layer having light-transmitting properties has been laminated to the surface having fine recesses formed and the functional layer having light-transmitting properties comprises an ultraviolet-absorbing layer and/or antistatic layer (see Abstract).

29. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the uv absorbing layer of Chang with the light diffusing sheet of Ohkawa for the benefit of insulating ultraviolet rays directly irradiated on the diffusion sheet.

30. Regarding claim 20, Ohkawa does not explicitly disclose a backlight unit including a light diffusing sheet having a thickness of 0.3-5 mm and has been disposed in front of a light source so that the surface of the sheet which has fine recesses formed serves as a light emission side, and a light diffusing sheet wherein a functional layer having light-transmitting properties has been laminated to the surface having fine recesses formed and the functional layer having light-transmitting properties comprises an ultraviolet-absorbing layer and/or antistatic layer.

31. Chang discloses a functional layer having light-transmitting properties has been laminated to the surface having fine recesses formed and the functional layer having light-transmitting properties comprises an ultraviolet-absorbing layer and/or antistatic layer (see Abstract).

32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the thickness of the light diffusing sheet, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the uv absorbing layer of Chang with the light diffusing sheet of Ohkawa for the benefit of insulating ultraviolet rays directly irradiated on the diffusion sheet.

33. Regarding claim 23, Ohkawa discloses a light diffusing sheet (30) comprising a light-transmitting resin (Column 8, Lines 22-29), characterized by having fine recesses (90) formed in at least one of the surfaces thereof (bottom surface), the fine recesses having a shape which is any one of the shape of an inverted polyangular pyramid (Figure 7a), the shape of an inverted truncated polyangular pyramid, the shape of an inverted cone, and the shape of an inverted truncated cone (Column 5, Lines 25-31; Figure 7b). Ohkawa does disclose the larger recesses being on the opposite side (Figure 5).

34. Ohkawa does not explicitly disclose bevel being between 35-70 degrees, a light diffusing sheet wherein the surface on the side opposite to the surface having fine recesses has recesses and protrusions which are finer than the fine recesses.

35. Chang discloses a functional layer having light-transmitting properties has been laminated to the surface having fine recesses formed and the functional layer having

light-transmitting properties comprises an ultraviolet-absorbing layer and/or antistatic layer (see Abstract).

36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the disclosed angle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the recesses across from the smaller protrusions, since it has been held that rearranging parts of a prior art structure involves only routine skill in the art. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950). Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the uv absorbing layer of Chang with the light diffusing sheet of Ohkawa for the benefit of insulating ultraviolet rays directly irradiated on the diffusion sheet.

37. Regarding claim 24, Ohkawa and Chang do not explicitly disclose a light diffusing sheet which has a thickness of 0.3-5 mm and has been disposed in front of a light source so that the surface of the sheet which has fine recesses formed serves as a light emission side.

38. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the thickness of the light diffusing sheet, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233.

***Conclusion***

39. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

40. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KRISTEN A. MANSKAR whose telephone number is (571)270-1220. The examiner can normally be reached on Monday-Friday 7:30a.m.-5p.m..

42. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

43. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM

/Sharon E. Payne/

Primary Examiner, Art Unit 2875